One of the hybrids in Dryopteris

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In a recent number of the BULLETIN OF THE TORREY BOTANICAL CLUB * Mr. Ralph C. Benedict cites fifteen crosses as occurring between the following six of our species of *Dryopteris*: *D. cristata*, *D. Clintoniana*, *D. Goldiana*, *D. marginalis*, *D. spinulosa*, and *D. intermedia*. Twelve of the fifteen hybrids have been described already.† Two are held for further study. The one remaining, *D. Clintoniana* × *marginalis*, is the subject of this paper.

This group of hybrid ferns is a difficult one, and plants are often found that are by no means easy to identify. This is partly due to our lack of knowledge of the range of variation normal to some of the parent species, or to be found in the different hybrids. *D. cristata* × *marginalis*, one of the best known and most common members of the group, appears to have a perfectly definite range of variation. It is impossible to say at present whether this is true of the others or not. Few have been collected in sufficient quantities to justify a conclusion. Most of them represent problems to be worked out.

The case is simplified by the fact that as a rule, at least, either the sporangia of these hybrids are abortive, or the spores, if present, are abnormal, and fertile hybrids, etc., are thus not likely to occur and confuse the outlook. Perhaps an exception to this may be found in *D. cristata* × *intermedia* (*D. Boottii*). Certainly the many plants of this hybrid, which occur so often, seem to indicate either a much more frequent hybridization than would be supposed probable, or some means of reproduction of the hybrid, perhaps asexual growth of some kind.

Dryopteris Clintoniana × *marginalis* I collected first at Pittsford, Vermont, in 1897, and again several times since then in

* 36: 41–49. 1909.

† See Bull. Torrey Club 35: 135–140. 1908; 36: 41–49. 1909. — Rhodora 6: 75–77. 1904. — Bot. Gaz. 19: 492–495. 1894.

the same locality. It grows there on the outskirts of a deeply wooded sphagnum swamp, near plants of both *D. Clintoniana* and *D. marginalis*. It may be described as follows:

Dryopteris Clintoniana × marginalis hyb. nov.

Rhizome stout, caudiciform or more or less decumbent; stipes about one third to seven eighths as long as the laminae; stipe-scales large and small mixed, light brown, often with dark centers, lanceolate to ovate, acuminate, subentire or ciliate-toothed; laminae 35–60 cm. long, 16–25 cm. broad, oblong-lanceolate or elliptic, acuminate; pinnae, excepting the uppermost, short-stipitate, varying from oblong-lanceolate to elliptic-lanceolate in the main part of the laminae to ovate-lanceolate at or near the base, mostly all long-acuminate, deeply pinnatifid or at base subpinnate, inequilateral, the inferior pinnulae the longest; pinnulae oblique, often subfalcate, oblong or ovate-oblong to lanceolate, obtuse or the longer often subacute to long-acute, the longest either at or near center or base of the pinna, few, usually the basal if any, constricted at base, obscurely notched or toothed or sparingly crenate-serrately toothed or lobed, the lobes often obscurely toothed; sori about 3–7 (rarely 8 or 9) pairs, nearer midveins than margins or midway between, a few occasionally submarginal; indusia glabrous.

Type in the Underwood Fern Herbarium, New York Botanical Garden, *M. Slosson*, from Pittsford, Vermont, 1908. Collected also by R. C. Benedict at Cornwall, Connecticut, July, 1907, and June, 1909; by E. J. Winslow at Barton Landing, Vt., 1905; by E. Brainerd at Middlebury, Vt., 1908 and 1909; and by H. G. Rugg, at Dorset, Vt., 1909.

The lack of resemblance of *Dryopteris Clintoniana* × *marginalis* to *D. Clintoniana* may perhaps be best defined as its suggestiveness of *D. marginalis* in outline of lamina, pinnae, and pinnulae, a suggestiveness which *D. Clintoniana* lacks altogether. Noticeable points of distinction from *Dryopteris Clintoniana* are the greater proportional breadth of the hybrid's leaf, its conspicuously attenuate apices, its color, nearer that of *D. marginalis*, the varying position of its sori, and its oblique often subfalcate pinnulae.

From *Dryopteris cristata* × *marginalis*, *D. Clintoniana* × *marginalis* may be most easily distinguished by the greater proportional breadth of the lower part of the lamina, coupled mostly with attenuate apices of all, even the basal, pinnae; by the position of

its sori, often nearer the midveins than in *D. cristata* × *marginalis;* and as a rule by its scales, which usually have dark centers, while those of *D. cristata* × *marginalis* appear uniformly light brown, so far as observed. But dark-centered scales do occur sometimes in *D. marginalis*, so are to be looked for in any of its hybrids. They are common in *Dryopteris marginalis* × *spinulosa* (*D. pittsfordensis*).

In 1902 Mr. George E. Davenport described in Rhodora * an anomalous plant as baffling identification, but suggested it might prove to be *D. Clintoniana* × *marginalis.* I have seen only scraps of pinnae of this plant, and have not been able to find out if other specimens are now in existence. Neither these scraps nor the published description of the plant tallies with anything I have seen that appeared unmistakably *D. Clintoniana* × *marginalis*, and it does not seem probable that the plant can have been this hybrid.

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*4: 10–13.